

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph starting at page 7, line 2 and ending at page 7, line 7 with the following paragraph:

In Fig. 1, reference numeral 500 represents 400°F air; 501 represents 50 - 200 mph.

Referring now to Fig. 2, the new stand-alone ground based hybrid deicing system 10 of the present invention, (shown in detail in Figure 7), utilizes a specially constructed coaxial nozzle assembly 20 that simultaneously delivers two independent, high velocity deicing streams.

Preferably, a deicing fluid stream is encased within a high velocity airstream. The nozzle preferably has a special .060 inch diameter jetting orifice that produces a conical shaped jet.

(In Fig. 2, reference numeral 400 represents heated deicing fluid from the triplex pump; 401 represents pressurized air from the centrifugal compressor (100 Lb per min); 402 represents 800 mph airstream; 403 represents 800 mph deicing fluid stream (high pressure/low flow mode); and 31 represents ASME “long radius” nozzle.)

Please replace the paragraph starting at page 9, line 13 and ending at page 9, line 18, with the following paragraph:

Fig. 3 is an illustration of a front view of a coaxial nozzle exit in accordance with the present invention. For most deicing conditions, high velocity low flow deicing fluid 44 is jetted from the center orifice 36 in a conical spray pattern. For hard, thick ice removal, low velocity high flow deicing fluid flows through the annular orifices at a rate of approximately 20

gpm. In both cases, the inner deicing fluid stream 42 is surrounded by a high velocity outer airstream 40. (Reference numeral 300 represents hard ice removal - high flow (20 gpm), low pressure deicing fluid flows through these annular orifices; 301 represents most deicing conditions - low flow (6 gpm), high pressure deicing fluid flows through this 0.060 inch diameter orifice.)

Please replace the paragraph starting at page 9, line 19 and ending at page 9, line 25, with the following paragraph:

Fig. 4 is an illustration of a schematic block diagram of a simplified glycol forced air deicing system 10 including deicing fluid tank 50 (heated deicing fluid (Type 1)) coupled to a high pressure pump 52 (variable speed: (1) 6 GPM MAX @ 7000 PSI (high pressure/low flow mode (most deicing conditions)); or (2) 20 GPM MAX @ 300 PSI (low pressure/high flow mode (hard thick ice)). A three way selector valve 54 (3-way selector valve for switching deicing fluid stream on/off) is coupled to the pump 52 to feedback deicer fluid to the tank 50 through return line 55 or to direct deicing fluids 42 and 44 to the nozzle assembly 20. A diverter ~~nozzle~~ valve 56 (on/off valve turned on for high flow, low pressure) is connected between the three way valve 54 and the outer fluid nozzle 44 so that when the diverter valve 56 is open a high volume of low pressure deicing fluid 42/44 flows to the nozzles 32 and 34. (In Fig. 4, reference numeral 200 represents pressurized air from shaft-driven compressor (100 Lb per min); 201 represents 800 MPH airstream; 202 represents 800 MPH deicing fluid stream (high pressure/low flow model).)

Please replace the paragraph starting at page 10, line 23 and ending at page 11, line 2, with the following paragraph:

Figs. 6a and 6b are illustrations of the frozen snow removal process in accordance with the present invention. In Fig. 6a, frozen snow is removed by the concentrated energy of the inner deicing fluid stream. In Fig. 6b, both ~~stream~~ streams work in concert to sweep away the loosened frozen snow. (In both figures, reference numeral 1101 represents snow frozen to test surface; 1102 represents air stream; and 1103 represents deicing fluid stream; also, Fig. 6a shows a frozen snow removal process, where the concentrated energy of the inner deicing fluid stream breaks loose the frozen snow; and Fig. 6b shows a frozen snow removal process, where both fluid streams work in concert to sweep away the loosened frozen snow.)

Please replace the paragraph starting at page 11, line 3 and ending at page 11, line 14, with the following paragraph:

Fig. 7 is an illustration of a hybrid glycol forced air deicing system 10 in accordance with the present invention. A key element of the hybrid deicing system 10 is the compact air source 41, such as a gear driven centrifugal compressor 41 (centrifugal air compressor), manufactured by AlliedSignal as a model P3X compressor. This compressor 41 is unique because of its very high power density, i.e., its high horsepower to low weight ratio. A high speed radial bladed impeller in this compressor produces pressurized air at 100 ppm at a maximum pressure of 29 psig for sea level operation. These characteristics of the compressor are

necessary to provide the air flow rate and discharge pressure at high altitude airports such as Denver International, as well as sea level airports, for effective hybrid deicing. The compactness of the machine allows it to be installed at the base of deicing booms to minimize air handling problems associated with air delivery through large diameter hose and pipe.

Please replace the paragraph starting at page 11, line 20 and ending at page 12, line 3, with the following paragraph:

Fig. 8 is an illustration of a truck mounted forced air deicing system in accordance with the present invention. (This is a deicer truck with hybrid deicing system; the compactness of the air compressor allows it to be located at the base of the deicing boom; reference numeral 2001 in this figure and in Fig. 9 represents the air compressor enclosure.) Figure 8 below shows a deicer truck 80 with a hybrid deicing system 10 installed. The equipment shown in this schematic would typically be installed in a deicer truck having a boom 92 (Fig. 8) or a ground mounted boom system 99 (Fig. 9[.]) such as the Ice Hawk system located at the Pittsburgh Airport. A deicing gun 82 including the coaxial nozzle is located at the boom basket 84 and the air compressor 41 is mounted at the base of the boom 80. The compressor 41 and triplex pump 70 can be hydraulically driven with a diesel (or gasoline) engine 74 as the ultimate power source. A control system 90 directly associated with the deicing process controls the deicing fluid valves (low flow, high flow or "off") and the speeds of the triplex pump 70 and compressor.